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NOMENCLATURAL NOTES ON HORTICULTURAL HYBRIDS: *DAHLIA* 'MEXICAN BLACK,' *POTENTILLA* AND OTHER ROSACEAE, *STYLOPHORUM*, AND *TIGRIDIA*

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ABSTRACT

Nomenclatural notes are provided on plants of four families. (1) Plants of the putative hybrid *Cosmos* × *Dahlia* 'Mexican Black' have been examined and compared with *Cosmos* and *Dahlia*. All the features examined relate to *Dahlia* rather than *Cosmos* and it is concluded that 'Mexican Black' is a *Dahlia*. (2) Names are provided for 13 intergeneric hybrids in Rosaceae and a hybrid name is validated as **× Tormariosorbus intermedia** (Ehrh.) Mezhenskyj ex J.M.H.Shaw, **comb. nov.** (3) A spontaneous garden hybrid between the North American *Stylophorum diphyllum* and the Chinese *S. lasiocarpum* is described as **Stylophorum × crugianum** J.M.H. Shaw. (4) The artificial hybrid *Tigridia pavonia* × *T. orthantha* (formerly *Rigidella*) is described as **Tigridia × mathewii** J.M.H. Shaw.

***Dahlia* 'Mexican Black'** (Asteraceae)

For several years 'Mexican Black' has been listed and sold in the horticultural trade as a bigeneric hybrid of *Cosmos* × *Dahlia*. It is widely accepted as a bigeneric hybrid in horticultural literature (Cubey, 2015; Dillon, 2015), and due to the dark maroon colour of the florets, it is usually speculated that *Cosmos atrosanguineus* is one of the parents. To gain insights in to the identity of 'Mexican Black,' plants were grown alongside several *Cosmos* and *Dahlia* accessions and compared morphologically. Recent floristic treatments of Mexican Asteraceae (McVaugh 1984; Turner 2010) note that *Cosmos* and *Dahlia* are distinguishable by a suit of characters, of which the pubescent filaments in *Cosmos* is a synapomorphy for the genus in *Coreopsideae* (Crawford et al. 2009).

Comparison of 'Mexican Black' with *Dahlia coccinea* revealed many similarities, notably large swollen tubers, similar fleshy foliage, outer phyllaries large and fleshy, glabrous filaments, style arms with long papillae, flat achenes without a pappus, and the distinctive aroma of *Dahlia* tissues when dissected. On the other hand comparison with *Cosmos atrosanguineus* revealed several differences, notably the presence of hairs on the anther filaments in *Cosmos*, which has much thinner slightly fleshy roots, thin foliage, style arms with short papillae and a distinctive shape, and quadrangular, though immature achenes with a pappus of two retrorsely barbed bristles, features all well illustrated in Hind and Fay (2003). This comparison was quite convincing in itself that 'Mexican Black' was a *Dahlia*.

It is of interest that dark blackish maroon flowers in dahlias are not unique to 'Mexican Black.' At least a further 14 cultivars produce similarly coloured flowers and the molecular basis for this has been elucidated recently by Thill et al. (2012). Hence the dark flower colour is not of itself indicative of hybridisation with *Cosmos atrosanguineus*.

Molecular investigations based on both nuclear and plastid sequences have revealed that after *Hidalgoa*, *Dahlia* along with *Dicranocarpus parviflora* is sister to the remaining *Coreopsideae*, and *Cosmos*, which appears to be monophyletic, is some distance away in a clade containing parts of *Coreopsis* and *Coreocarpus*, both of which are polyphyletic as presently circumscribed (Crawford et al. 2009). Consequently, *Cosmos* and *Dahlia* are not particularly close. This is further borne out by Mii (2009) and collaborators, who attempted to breed new horticulturally valuable plants from *Cosmos atrosanguineus* and using plastic sequences determined it to be clearly a member of *Cosmos* rather than *Dahlia*, with *C. bipinnatus* and *C. sulphureus* as its nearest relatives (Oku et al. 2008). Mii

reported ovule swelling occurred only in hybrids of *C. atrosanguineus* with *C. sulphureus*, and triploid plantlets were obtained only after intervention with embryo rescue. The resultant hybrids have since been marketed as clonal cultivars in Japan. Colchicine induced amphidiploids were able to back-cross successfully with *C. sulphureus*, but not with *C. atrosanguineus*. Given the admitted difficulty of hybridizing *C. atrosanguineus* with other closely related congeners, the likelihood of producing intergeneric hybrids with the genetically remote genus *Dahlia* is incredible. Consequently, when considered along with the absence of any morphological traits derived from *Cosmos*, it is evident that 'Mexican Black' should be regarded as simply a hybrid within *Dahlia*.

Potentilla sensu lato and other Rosaceae

Following the publication of the accounts of *Potentilla* and related genera in *Flora of North America* (Ertter et al. 2014) and the study on Rosaceae phylogeny and classification by Potter et al. (2007), the Royal Horticultural Society's Nomenclature and Taxonomy Advisory Group (NATAG) has recommended for horticultural use the adoption of a narrower concept of *Potentilla* along with acceptance of *Comarum*, *Dasiphora*, and *Drymocallis*. These changes are expected to be adopted in the 2016 edition of the *RHS Plant Finder*. This requires the validation of several new hybrid generic names.

Fragaria × *Dasiphora* = × ***Fragiphora*** J.M.H. Shaw, **nothogen. nov.**
Fragaria × *Drymocallis* = × ***Drymogaria*** J.M.H. Shaw, **nothogen. nov.**
Fragaria × *Potentilla* = × ***Potenaria*** J.M.H. Shaw, **nothogen. nov.**

A name for *Fragaria* × *Comarum* is already available as × *Comagaria* Büscher & G.H. Loos in Veroff. [Bohumer Bot. Ver. 2(1): 6. 2010], along with the combination × *Comagaria rosea* (Mabb.) Büscher & G.H. Loos. [basionym: *Potentilla* × *rosea* Mabb.] specifically to accommodate the cultivar 'Frel,' also sold under the trade designation PINK PANDA.

The opportunity is also taken to provide valid nothogenera for the following hybrid combinations in Rosaceae.

Amelanchier × *Aria* × *Pyrus* = × ***Ariamelyrus*** J.M.H. Shaw, **nothogen. nov.**
Amelanchier × *Aria* × *Sorbus* = × ***Arisorbanchier*** J.M.H. Shaw, **nothogen. nov.**
Aronia × *Mespilus* × *Sorbus* = × ***Mesaronibus*** J.M.H. Shaw, **nothogen. nov.**
Aronia × *Crataegus* × *Sorbus* = × ***Crataronibus*** J.M.H. Shaw, **nothogen. nov.**
Cotoneaster × *Pyracantha* = × ***Cotacantha*** J.M.H. Shaw, **nothogen. nov.**
Cowania × *Fallugia* = × ***Fallania*** J.M.H. Shaw, **nothogen. nov.**
Cydonia × *Pseudocydonia* = × ***Cydocydonia*** J.M.H. Shaw, **nothogen. nov.**
Mespilus × *Sorbus* = × ***Sorbomespilus*** Mezhenskyj ex J.M.H. Shaw, **nothogen. nov.**
Photinia × *Pyracantha* = × ***Photacantha*** J.M.H. Shaw, **nothogen. nov.**
Pyracantha × *Sorbus* = × ***Sorbacantha*** hort. ex J.M.H. Shaw, **nothogen. nov.**

An additional transfer needs to be validated. When establishing the nothogenus × *Tormariosorbus* Mezhenskyj, with the parentage *Aria* × *Sorbus* × *Torminalis,* Mezhenskyj (2012: 28) also intended to provide a new combination based on *Pyrus intermedia* Ehrh. Unfortunately he used the unpublished nothogeneric name × *Sorbotoraria*, evidently for *Aria* × *Sorbus* × *Torminalis*, instead of the name × *Tormariosorbus* that he had just established two lines above on the previous page. Hence the intended combination is here validated.

× **Tormariosorbus intermedia** (Ehrh.) Mezhenskyj ex J.M.H.Shaw, **comb. nov.** Basionym: *Pyrus intermedia* Ehrh., Beitr. Naturk. (Ehrhart) 4: 20. 1789.

Synonym: × *Sorbotoraria intermedia* (Ehrh.) Mezhenskyj in Mezhenskyj et al., Rare Fruit Crops 2012: 29. Nom. inval.

Stylophorum (Papaveraceae)

Stylophorum is a small genus of three species of woodland perennials notable for an East-West disjunction with one species, *S. diphyllum*, from eastern North America and two from China. Investigation of relationships using chloroplast DNA revealed that the American *S. diphyllum* is sister to the remainder of Eurasian *Stylophorum* and *Chelidonium* (Blattner & Kadereit 1995). Recently a spontaneous hybrid between the North American *Stylophorum diphyllum* and the Chinese *Stylophorum lasiocarpum* was discovered adjacent to both parents in the gardens at Crûg Farm Plants, North Wales. It is here provided with a valid name.

Stylophorum × **crugianum** J.M.H. Shaw, **nothosp. nov**. **TYPE**: N. Wales. Crug Farm, 2014, *Bleddyn Wynn-Jones & J.M.H. Shaw s.n.* (holotype: WSY).

Differs from *Stylophorum diphyllum* by more than 2–4 flowers per cluster, and slender rather than ovoid capsule. Differs from *S. lasiocarpum* by deeply lobulated apical leaf lobe and shorter wider capsules. Perhaps approaches *S. sutchenense* in capsule characters, which invites speculation that it could be a paleohybrid.

Spontaneous garden hybrid with characters intermediate between the parents. Perennial herb to about 50 cm tall, with orange latex. Stems erect, simple, with sparse linear hairs. Leaves several, petiole 3–5 cm long, blade dark green above, glaucous green beneath, ca. 30 cm long x 20–23 cm at widest point, oblong-obovate with 3–4 pairs of lobes and a large terminal trilobulate lobe, 12–14 cm long x 11–13 cm wide; lateral lobes ovate-oblong, 10–14 x 5–6 cm, covered towards leaf apex, margins coarsely crenate, lowermost lobes smaller 5–7 x 2–3.5 cm. Flowers 7–9 in umbel-like, sometimes partly compound, clusters, opening in succession. Bracts 5–10 mm long x 3–4 mm wide, lanceolate, with scattered pubescent hairs. Pedicels 8–13 cm, pubescent. Sepals ovate, 12–18 mm long, exterior pubescent, apex acute. Petals yellow, obovate to orbicular, 3 cm long x 2–2.5 cm wide. Stamens ca. 28, 10–11mm long; anthers yellow, oblong, ca. 2 mm long. Ovary narrow lanceolate, strigilose, ca. 7 mm long; style glabrous, 2–3 mm; stigma bilobed, surface densely pubescent. Capsule pubescent, narrowly oblong-ovate. Figure 1 shows both parents; Figure 2 show the hybrid.

Figure 1. *Stylophorum* parents. *S. diphyllum* above, *S. lasiocarpum* below.

Figure 2. *Stylophorum* × *crugianum*.

Tigridia (Iridaceae)

Since the 1970's a hybrid between *Rigidella orthantha* and *Tigridia pavonia* originally made by Elmer Molseed has been in cultivation in USA, albeit rarely seen in the UK. It was illustrated and informally described by Brian Mathew, who cultivated it in his garden from stock obtained from the USA (Mathew 1978). He also deposited a herbarium specimen at Kew.

At that time *Rigidella* was accepted as a genus distinct from *Tigridia*, although the two genera were regarded as closely related. As Mathew noted, the differences seem to be related to differing pollination requirements of hummingbirds, hence the bright red flowers of *Rigidella* and flies or bees in the muted shades of *Tigridia*. Chilean botanist Pierfelice Ravenna provided new combinations in *Tigridia* for the known *Rigidella* species in a paper on conservation, without any explanation other than observing that *Rigidella* species are more similar to *T. pavonia* than to other *Tigridia* species (Ravenna 1977), a point already noted by Molseed (1970) in his revision of *Tigridia*. Subsequent molecular work has upheld the inclusion of *Rigidella* within *Tigridia* along with several other small Central American genera including, *Ainea*, *Colima*, *Fosteria*, and *Sessilanthera* (Rodriguez & Sytsma 2006; Goldblatt & Manning 2008). Consequently this hybrid is no longer regarded as intergeneric. A name is here provided for use in the horticultural literature.

Tigridia × **mathewii** J.M.H.Shaw, **nothosp. nov.** **TYPE**: Cultivated plant, UK, *B. Mathew s.n.* (holotype: K). Illustration: Mathew, 1978: 125.

Vigorous, sterile hybrid between *T. pavonia* and *T.* (*Rigidella*) *orthantha*. Corm and foliage very similar to *T. pavonia* but with greatly increased bulbil production. Flowers intermediate between parents, held erect with outer tepals scarlet and reflexed as *T. orthantha*, but inner tepals yellow, smaller than *T. pavonia*, but larger than in *T. orthantha*. Tepal bases forming a cup-like structure, as in *T. pavonia*, spotted and blotched scarlet and yellow.

Flowering June to August, but not producing seed. Increasing rapidly by bulbils. Named for Brian Mathew (former Kew botanist), who introduced it to UK cultivation and who made extensive studies in Iridaceae. The hybrid was also mentioned in passing by American bulb enthusiast T.M. Howard (2001), who noted that it is vigorous, showy and infertile.

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